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Heis, Alexandra; Vaddhanaphuti, Chayan

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Thai Baan Methodology and Transdisciplinarity as Collaborative Research Practices. Common Ground and Divergent Directions

Alexandra Heis[a] & Chayan Vaddhanaphuti[b]

[a] University of Vienna, Austria; [b] Chiang Mai University, Thailand

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Thai Baan research was developed in the late 1990s as a counter-hegemonic, emancipatory means of knowledge production. Originally developed in the context of protests against a hydropower project, it aims at empowering socially and economically marginalized actors to create and represent their own knowledge and to regain authority in social struggles. This decolonial methodology, conceptualized by Thai academics in collaboration with non-academic actors, has remained largely unnoticed by Northern collaborative or transdisciplinary debates. Transdisciplinary research, although engaged in collaborative research designs, often remains silent on issues of power imbalances as constitutive of research processes. Criticizing the compartmentalization and limitation of academic knowledge production, transdisciplinarity realigns the scientific system of knowledge production to deal with 'real-world problems'. During the last three decades, transdisciplinarity has unfolded into a collaborative and integrative methodology implemented in a number of fields, such as sustainability, public health, and development planning. This article systematically introduces Thai Baan and transdisciplinarity as two approaches to collaborative research practice. It introduces the context of their emergence, sheds light on the respective notions of knowledge and science, and discusses their respective methodological designs. It is argued that both would benefit from a stronger epistemological foundation in decolonizing, liberating philosophies of science to enhance collaborative action, overcome North-South divisions, and foster global dialogues in emancipatory knowledge production.

Keywords: Collaboration; Critical Research Methodology; Sustainable Development; Thai Baan; Transdisciplinarity

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INTRODUCTION

The question of whether and how we can know the world is probably as old as humanity itself. Positions regarding this question are many and contested among thinkers and intellectuals from different schools, based not only in contrary epistemological foundations but also in divergent ontologies. *Thai Baan*, a counter-hegemonic methodology (Chayan, n.d.), and *transdisciplinarity*, a collaborative framework based on co-leadership of science and practice (Scholz &

Steiner, 2015, p. 654), seem in many respects similar. Their imaginaries and visions are quite alike, for example the ethical foundations, on which they stand, or the better handling of socio-ecological challenges, for which they call. During the KNOTS (*Fostering Multi-Lateral Knowledge Networks of Transdisciplinary Studies to Tackle Global Challenges*) project (Dannecker, 2020, this issue) the authors participated in several activities in which students, scientists, and professionals worked together to develop didactic methods to teach transdisciplinarity in higher education institutions. Thailand's Chiang Mai University, which hosted one of the annual regional foci within the project, has sound expertise on, and well-developed collaborative relations with non-academic actors, local groups, and activists in the region. Furthermore, Chayan Vaddhanaphuti, a member of the KNOTS consortium, has co-developed and enrooted Thai Baan in Southeast Asia. During the KNOTS summer school and field trips, colleagues from Chiang Mai and others raised the question of why this EU project is needed to develop a research practice, which is already well established there. The question of whether Thai Baan and transdisciplinarity are the same, or whether transdisciplinarity is yet another colonizing paradigm excluding local knowledges, fueled several discussions during the project lifetime. As a result, this article problematizes specific objectives of both approaches and tries to link them to other recent innovations in participatory and transformative research. Both work towards a convergence of science and practice, with Thai Baan taking ecological expertise of everyday life-experience as a starting point and transdisciplinarity starting from a conceptual perspective of 'wicked problems'[1]. The one is born out of direct experience of marginalization and subjugation, while the other from the experience of deficiency of 'pure science'. While their starting points might differ, their problem awareness points in the same direction.

Both, for example, feature the concept of 'local knowledge'. In Thai Baan methodology, local knowledge is embedded in the real political struggle of actors who oppose powerful, political and economic interests (Chainarong, n.d.; Chayan, n.d.). Transdisciplinarity combines academic expertise with non-academic - ergo local - knowledge to learn about different and conflicting stakes in the problems at hand. It stresses the mutual understanding derived through science and practice, but "science remains independent" (Scholz & Steiner, 2015, p. 655). In Thai Baan, science is not independent but always socially engaged (Chayan, 2003). Transdisciplinarity and Thai Baan thus both focus on collaborative processes, although they are conceptualized differently. While transdisciplinarity maintains the dualism between science (non-spatial) and practice (local), Thai Baan methodology produces local knowledge by supporting local actors to take the lead in the research process. These contrasts create different understandings of collaboration and participation. Nevertheless, both knowledge frameworks claim to be better-equipped to represent complex realities and different perspectives.

The first section of this paper gives a short description of the origins and specific contexts of Thai Baan and transdisciplinarity. The second part investigates the concept of knowledge as linked to collaboration. The third part looks at the concrete

1 The notion of 'wicked problems' was introduced by the urban planners and designers Horst Rittel and Melvin Webber (Rittel & Webber, 1984) to describe problems that, could be solved only through cooperation of affected social actors.

methodologies of Thai Baan and transdisciplinarity and in conclusion traces their divergent directions.

THAI BAAN AND TRANSDISCIPLINARITY: ORIGINS OF TWO CONTEMPORARY FRAMEWORKS OF COLLABORATIVE RESEARCH PRACTICE

The Decolonial Methodology of Villagers' Research

Thai Baan research originated in the concrete protests against the *Pak Mun* hydro-power dam construction and respective governance strategies. The Pak Mun Dam, completed in 1994, is one among many hydro-power dams built in Southeast Asia from the 1960s onward (Amornsakchai et al., 2000). It was projected to cover daily peaks in electricity demand and to support development in Northeast Thailand, where it is located (Chayan, n.d.). From the beginning of the planning activities in the late 1970s, Pak Mun opponents demanded to be part of planning and decision-making processes regarding the use of wetland ecosystems, access to land and water rights, and environmental protection. They demanded a broader discussion of the concept of development in which water management and hydro-power have been identified as central issues in tackling poverty by national and international development actors (Blake & Buapun, 2010; Missingham, 2002). Contrary to trickle-down calculations of development economists, the benefits of the dam construction were not delivered to Pak Mun residents, nor were the estimated revenues ever reached (Baird, Manorom, Phenow, & Gaja-Svasti, 2020). Opponents wanted the dam decommissioned, and claimed that massive societal, cultural, and natural losses were incurred. Livelihoods were damaged and income in fishery decreased, while considerable parts of the population were resettled. This has negatively affected communal, reciprocal relations, wetland forests, and access to communal land and resources (Amornsakchai et al., 2000).

Throughout the 1990s, the protests against the Pak Mun Dam became the rallying-point for other nationwide movements against ecologically and socially harmful development projects in Thailand, which became known collectively as the *Assembly of the Poor* (AOP).[2] Pushed forward by a coalition of activists, academics, civilian supporters, and affected residents, the broad alliance of social movements eventually made inroads. After six years of negotiation, the government agreed to open the dam gates between June 2001 and November 2002 to examine whether the effects would justify decommissioning the dam. The government and the electricity authority both assigned different university departments to assess the economic, social, and environmental impacts of the opening (Blake & Rattaphon, 2006; Chayan, n.d.).

Prior to this, studies on the social impact of the dam had already been conducted. *The World Commission on Dams* (WCD) report (Amornsakchai et al., 2000), for instance, used participatory research methods as one tool for collecting data, but the participative research was criticized for ignoring aspects of the Pak Mun eco-system, especially the social dimensions of fishing, or the status of the river as part of the

2 AOP is a loose, nationwide assembly of local and regional social movements, in which less secure, and small-scale farmers and fishers pursued a relatively successful mass agitation of public spaces, raising awareness for failed development intervention (Baker, 2000).

spiritual and communal identity of the people. Pak Mun opponents claimed that the report did not reflect the local knowledge appropriately. They objected that negative effects caused by hydropower production were not adequately represented in the WCD report, nor in any other evaluation carried out by the government or its agencies (Amornsakchai et al., 2000; Chayan, n.d.).

This frustration with flawed results of participatory research led Chayan Vaddhanaphuti and colleagues to encourage the dam opponents to conduct their own research when the gates reopened. *Ngan Wijai Thai Baan* (short *Thai Baan*) has been widely translated as "villagers' research" (Blake & Rattaphon, 2006; Chayan, n.d.; Myint, 2016), but could also be translated as "independent village research" or even "independent local research". Thai Baan was inspired by the ideas of Paulo Freire's "pedagogy of the oppressed" (Freire, Macedo, & Shor, 2018), and the experience that participation did not guarantee sufficient independence, liberation, or transformation. Thai Baan is therefore an unwavering effort to challenge the hegemonic paradigm of hydro-power development. The *villager-researchers* collected data that they found important from their perspective and used their own terminology according to their interests and experiences. A dedicated group of those directly affected by the dam, who were well-acquainted with the river, was assisted and supported by volunteering students, NGO professionals, and other university staff. The AOP and the *Southeast Asia Rivers Network*[3] (SEARIN) provided institutional support, organizational experience, scientific know-how, and helped with the systematization of findings.

It is necessary to mention that *villagers* as a category in the context of Thai Baan – much like the category of the *poor* in the AOP – needs to be understood in the context of social struggle and contested modernities in Thailand. It is a self-empowering re-appropriation of a term originally imposed by an urban elite for whom the 'village' and its residents are met with suspicion. The 'villagers' and the 'village' in Thai Baan are not primarily social or socio-spatial categories based on stereotypical traits and characteristics of village residents. Rather, they are political terms of resistance and reclaiming. In the context of popular Thai modernization discourse, *chao baan* (*villager*) has a judgmental connotation and derogative meaning, indicating a person's backwardness and their lack of classiness and sophistication (Rigg, 2019, p. 30). Villagers in the context of Thai Baan are those living with and off the river and riverine ecosystems on a small-scale, subsistence basis. Because of their livelihoods, they are often excluded from knowledge production. Thai Baan researchers are those who want to change their position and visibility in the dominant development narrative. In order to achieve this, they must commit to a 'David versus Goliath' battle, as Thai Baan is very time consuming, emotionally exhausting work that requires many hours of discussion, workshops, and travelling. Moreover, the prospects of success and the potential for change are rather small.

Integrating Thai Baan research in academic and NGO structures has helped to translate the methodology into other local struggles on wetland ecosystems and other socio-ecological challenges and allowed it to become a significant strategy for academic

3 SEARIN, today Living River Siam Association, is involved in research and analysis of dam projects on lives of indigenous people. It was established in 1999 and is closely linked to Thai Baan research. Its objective is supporting and promoting local knowledge and local rights to water resources, as well as the rights of rivers and riverine ecosystems (Living River Siam Association, n.d.).

activism, civil resistance, and emancipatory pedagogy on the Southeast Asian mainland (Blake & Buapun, 2010; Chayan & Amporn, 2011; Lamb et al., 2019). To articulate specific local claims of marginalized actors to challenge dominant knowledge frameworks in political negotiations is a merit worth mentioning. The language of the study reflects the local terminology of fish occurrence and its socio-economic uses, river topography, seasonal changes and migration patterns, processing and production diversity, mythology, beliefs and folklore and thus represents the understanding of wetlands ecosystems of local fishers, and other people who life off the rivers (Blake & Rattaphon, 2006; Chainarong, n.d.; Chayan, n.d.; Mekong Watch, 2004).

Promoting Sustainability Through Transdisciplinarity

Rather than taking sides in social struggles, transdisciplinarity originates in theoretical debates about how science could better respond to societal problems. The first generation of scholars promoting transdisciplinarity, such as Jean Piaget (1972), among others, called for crossing boundaries between scientific disciplines, developing shared and unified axioms, and a new system of science. In recent years, transdisciplinarity aimed at enhancing sustainable futures by strengthening scientific integration of non-academic knowledge (Klein, 2009). Shortly before Thai Baan research was launched in the Pak Mun villages, a consortium of Swiss scientific and research organizations hosted the *International Transdisciplinarity Conference* in Zurich in February 2000 (Klein et al., 2001; Lawrence, 2015). The participants questioned how science might improve at solving persistent, 'real-world problems' in a sustainable way. Subsequently, the *Transdisciplinary Lab* at the ETH Zürich, as well as the *Network for Transdisciplinary Research* of the *Swiss Academy of Science*, became two major hubs for developing transdisciplinarity as a new scientific program, along with guidelines and criteria for collaborative research practices (Lawrence, 2015; Padmanabhan, 2018). Transdisciplinarity is closely related to sustainable development theories and the concept of participation, which emerged as a new, alternative model in international development and address primarily disempowered actors (Chambers, 1994; Jacob, 1994). Thai Baan and transdisciplinarity are thus closely linked to transformative tendencies in development research and practice (Hadorn et al., 2008).

Contrary to earlier, universalist tendencies, present approaches to transdisciplinarity stress heterogeneity, complexity, and difference at the theoretical and ontological level (Klein, 2013; Pohl, 2011; see also Bärnthaler, 2020, this issue). Yet, while transdisciplinarity sets out to deal with socially relevant matters, the stimulus for transdisciplinary research remains mainly within academia (Pohl, 2010). Maasen, Lengwiler and Guggenheim (2006, p. 395) classify four, and Pohl (2010, 2011) three slightly overlapping types of transdisciplinary collaboration. Only two of these seven types take transdisciplinarity initiated from outside of academia into account. Thus, while transdisciplinarity stresses the need for collaboration, it reproduces the traditional labor divisions in knowledge production, with roles and responsibilities clearly distinguished. Thai Baan also addresses the complexities of social and political movements for which there are no clear-cut distinctions between responsibilities, tasks, or professional identities. Rather, it is the collective identity of participants that make social movements and their research strong and sustainable (Chesters & Welsh,

2005, p. 190). However, in contrast to transdisciplinarity, the collective identity of social movement activists and the complex nature of movements make it difficult to distinguish between such categories as 'academic', 'activist', 'villager', or 'NGO professional' (ibid.). Throughout the KNOTS project, we struggled with the conceptual distinction between non-academic and academic actors in transdisciplinarity (Dannecker, 2020, this issue).

KNOWLEDGE PRODUCTION AND THE CONCEPT OF KNOWLEDGE

Transdisciplinarity and Thai Baan operate within slightly different concepts of knowledge. Thai Baan produces local, situated knowledge (Chayan, n.d.; Haraway, 1988), while transdisciplinarity emphasizes applied knowledge (Klein, 2020). Thai Baan sees knowledge as constituted through social and material relations, and stresses epistemologies of locality and difference. In the case of transdisciplinarity, epistemology has shifted towards notions privileging relationality and complexity, too, but knowledge is primarily target-oriented.

Managing Complexity and Divisions of Labor

Early theorists of transdisciplinarity wanted to establish unified, shared axioms for a set of disciplines (Bernstein, 2015; Klein, 2020; Piaget, 1972). Their focus was exclusively the theoretical openings between academic disciplines. Basarab Nicolescu (2010), an important transdisciplinary theorist, based his analysis on recent findings in quantum physics. He argued for considering transdisciplinary knowledge as an *open unity* linking different levels of reality as well as different levels of perception. This *unity in complexity* constitutes a "third space", a space defined by contradiction, plurality, and simultaneity (Nicolescu, 2010). Grounding transdisciplinarity within social science, the sphere of society shifts its focus from merely theoretical thoughts towards social actors, practices, and their different experiences.

As the integration of technical, planning knowledge and social science and society increased, the fields of sustainability and transdisciplinary studies grew closer, both subsequently opening to more collaborative conceptualizations of knowledge. Gradually, the *unity in complexity* (Nicolescu, 2000) was operationalized into "stakeholders and community input" (Klein, 2009; Nowotny, 2006). The question guiding transdisciplinary endeavors became "where are the people in *our* knowledge?" (Klein et al., 2001, p. 5, own emphasis). In contrast, Thai Baan asks about the knowledge *of* the people, which is a substantially different positioning. Shaking the conventional, scientific principle of expertise in its own right, transdisciplinarity acknowledges the "unstructured" nature of problems characterized by complex cause-effect relationships (Hadorn et al., 2008, p. 25). Transdisciplinarity engages the critique of science and has benefited from including *Mode 2 knowledge* production and the concept of socially robust knowledge (Gibbons et al., 1994, p. 33).

Mode 2 and socially robust knowledge specify research that is application-oriented and practical (Hadorn et al., 2008, p. 25; Nowotny, 2006). Mode 1 is exemplified by disciplinary closure, epistemological monocultures and institutional hierarchies. Mode 2, in contrast, is organized around problems of everyday life, identified in a

multi-stakeholder process by multi- and interdisciplinary teams, characterized by flat hierarchies and multi-directional chains of command. Because it is socially accountable and reflexive, it produces socially robust knowledge (Gibbons et al., 1994; Nowotny, Scott, & Gibbons, 2003). This corresponds to other decolonizing and emancipatory research paradigms. However, the dismantling of hierarchies in transdisciplinary teams - be it between scientific actors or between science and practice - is a very demanding and lengthy challenge. It is particularly so in transnational teams, in which gendered, professional, and racialized hierarchies are complicated by the North-South divide, and postcolonial axes of domination and marginalization (Rosendahl, Zanella, Rist, & Weigelt, 2015; Schmidt & Neuburger, 2017; see also Dannecker, 2020, this issue). A successful reorganization of knowledge production under transdisciplinarity will crucially depend on whether the team is able to become a collaborative team.

The technical understanding of the research process in transdisciplinarity is outlined in Pohl and Hadorn's (2008) classification of generated knowledges: *system knowledge*, *target knowledge*, and *transformation knowledge* (pp. 114-118). System knowledge shows the origin of a problem, and interrelations between its elements. Target knowledge is essentially normative, as it identifies anticipated goals and outcomes of the research and reflects the values and attitudes of relevant actors on what should be changed and how. Transdisciplinarity, Pohl and Hadorn (2008) write, is committed to fostering the "common good" (p. 117). Just what the common good is, and how to identify it, is a very delicate question not explored in transdisciplinary writing. While the common good is seen as being at the core of democratic societies and the basis of sustainability, others will argue that notions of common good are fiercely contested (Della Porta, 2013; Offe, 2012). Finally, transformation knowledge specifies what needs to be changed in order to achieve the targeted goals. Transformation knowledge should be applied and practice-oriented, examining technical, cultural, social, or legal instruments to attain transformation. All three forms of knowledge are part of each transdisciplinary research process. Diverging interests and conflicts among different parties within different phases of transdisciplinary research, as well as lack of commitment or other resources, are too rarely considered in methodologies and models of transdisciplinarity (Nowotny, 2006; Pohl & Hirsch Hadorn, 2008).

But knowledge is not an innocent thing – it can be an instrument of emancipation as well as domination, as has been noted by many theorists from different disciplines (Collins, 2000; Cornwall, 2004; Foucault & Gordon, 1980; Santos, 2007; Spivak, 1985). The complicit relation between knowledge and power has been particularly well-analyzed by post-colonial and decolonial authors, who describe the alliance and legacy of colonial subjugation through knowledge production as epistemic violence (Smith, 2013; Spivak, 1985). In Thailand, Sulak Sivaraksa (1975) was one early critic of how knowledge on Thailand was embedded in wider geopolitical strategies of the Cold War, as well as in internal colonization and nation-building. A dominant understanding of national development in a hierarchical international order has, in Thailand as in other parts of the world, encouraged methodological nationalism, modernization, and technocratic normativity in academia and politics (Bärnthaler, 2020, this issue). Under this logic, participation becomes little more than an extractive practice in knowledge production (Chayan, 2003, n.d.).

Situating Knowledge as Counter-Hegemonic Methodology

Knowledge about life and livelihood in rural areas of Thailand is often biased and inadequate. On the one hand, a nostalgic imaginary of Bangkok-based elites pictures peasants as living romantic lives, pure and unspoiled by modern necessities. On the other hand, customs, languages, and subsistence practices of small-scale farmers and people living in villages are represented as ignorant, engaged in conspicuous consumption, and indebted (Rigg, 1994).

It is particularly indigenous people and their practices that are branded as resistant to modernization and whose practices are deemed irrational (Clarke, 2001; Erni, 2009). The nexus of knowledge production, development policy, and powerful economic interests is strongly reflected in the realms of agro-industrial production, forestry, and rural development (Lohmann, 1995). Diversity of economic practices, including cooperatives, solidarity economies, and labor exchanges, has been consistently ignored in research and policies on rural development (Heis, 2015; Sato, 2003). The rural is a highly dynamic space, defined by its multiple relations to other spaces and scales of governance, mobilities, and solidarity relations (Rigg, 2019).

Space, place, and local knowledge are important concepts in the contestation of dominant discourses. Environmental impact assessments (EIAs) are central instruments in formal decision-making processes on large-scale development projects, and have been compulsory since the early 1980s (Tongcumpou & Harvey, 1994). However, EIAs often privilege the 'national' as a scale of relevance with regard to effects, gains, and implications of dam construction, but ignore the local[4] as a scale at which the highest costs are borne (Lamb, 2014). *Researching back* (Chilisa, 2012) with Thai Baan methodology results from the awareness of the inferior position of the rural local in the construction of official 'national' knowledge, corresponding to the unequal distribution of benefits and losses caused by the dam. The concept of the local as a valuable site for theorizing diversity and pluralism (Gibson-Graham, 2004; McKinnon, Gibson, & Malam, 2008) speaks to other power-sensitive epistemologies and methodologies. The monopolizing effects of modern, positivist science have also been criticized by post-colonial theory (Said, 1979; Spivak, 2010), as well as more recent developments of decolonizing methodologies and indigenous research paradigms (Chilisa, 2012; Santos, 2008; Smith, 2013). From a feminist perspective, Haraway's (1988) situated knowledge, Massey's (1993) locality studies, or Harding's (1993) strong objectivity[5] have defined emplaced research as counter-hegemonic academic practice. Thai Baan becomes a counter-hegemonic practice by producing

4 Whether the local as locus of abstraction and theorisation, or merely an anecdotal specificity is a lengthy debate (Massey, 1991, 1993). In the case of national versus local scale, we witness a shift in importance between one local site, here Bangkok as representing the 'national', and the diminishing of importance of the other local site, namely the villages of Pak Mun. If theory is implicitly global and excludes the local as a relevant site of theorization, it reproduces the meaning and relevance of dominant centres (Santos, 2007).

5 Situated knowledge (Haraway, 1988) argues against the naïve objectivity of positivist science, which, by disclosing its positionality objectifies the privileged experiences of those who produce it. A strong objectivity is a transparent partiality (Harding, 1993), supporting knowledges from marginalised positions and their claims for an emancipatory knowledge. Massey (1993) argues for local knowledge as equally legitimate to allegedly a-spatial knowledge. All knowledge is local in the sense that it is situated in concrete, physical experiences of speakers.

knowledge that is embodied, emplaced, and formulated from the margins (Chayan, n.d.). Situated knowledges do not conceal their partiality but make it explicit and open for collaborations and alliances (Chilisa, 2012). Situated knowledges allow the subaltern to speak (Spivak, 2010).

As a local knowledge methodology based on fieldwork as commitment (Gibson-Graham, 2004), Thai Baan creates space for articulating and including mythology and elements of folklore, which define nature and society relations. For example, the concept of animism assigns agency to natural elements and phenomena. Thus, a river stops being an object of exploitation or research and becomes a matter of co-existence. The results of Thai Baan do engage with the language and logics of positivist natural sciences but go beyond their mere descriptive, empirical nature. Linking data to changes in every-day lives, embedding their relevance in social, cultural, and spiritual phenomena, and specifying future imaginaries substantially challenges the reductionist accounts of conventional, natural and economic science research.

With Santos (2007), we could say that Thai Baan opens a road to an *epistemology of seeing* by representing what is at the margins of an excessively narrowed-down frame of relevance. Thai Baan thus aims at reconstructing indigenous agency in representation and interpretation of social realities. Furthermore, Thai Baan seeks to restore almost-lost narrations, understandings, beliefs, and practices by validating the relevance they have in the everyday lives of Thai Baan researchers in order to restore self-esteem and respect for the different, the non-hegemonic, the supposedly non-relevant, and the often overlooked (Chilisa, 2012).

UNDERSTANDING OF COLLABORATION

Attempts to include experiential knowledge in development planning are not new. In development cooperation, the inclusion of practical knowledge of local actors through *participatory rural appraisal* (PRA) was expected to increase the success of development projects and research (Chambers, 1994). However, participatory methods were soon criticized for being extractive and increasing social inequality among the participants (Cornwall, 2004; Kothari, 2001). In practice, participatory research proved to be structurally inhibitive, and less powerful participants were co-opted by dominant actors (Cooke & Kothari, 2001). A modification of participation, the *participatory action research*, originates in social movements and combines the focus on marginalized groups with explicit political action. Action research, as an example from feminist struggles, is deeply embedded in the science/experience interface and oriented towards emancipation (Gatenby & Humphries, 2000). Participatory action research envisions academics as parts of society and as social actors constructing 'knowledge' and 'reality' (Whyte, 1991). On these grounds, Thai Baan (Chayan, n.d.) understands collaboration as action research, in which protest is accompanied and articulated through research. Transdisciplinarity integrating non-academic actors is often referred to as *participatory transdisciplinarity*, without engaging with the critical debates on the pitfalls of participation (Pohl, 2010). In this section we want to discuss how collaboration is understood in both research frameworks, how it relates to the above understandings of knowledge, what the implications for the ownership of the knowledge produced are, and how it effects the underlying objectives.

Ownership and Empowerment Through Action

The first step in carrying out research under the collaborative scheme in Thai Baan is the constitution of a focus group. The research activity in Thai Baan is an additional task for the (non-professional) researchers, not their primary occupation. It must be carried out in addition to daily tasks, which means that leisure and reproductive time must be sacrificed for research activities. The contribution of the non-academics here is the essential, constitutive part of the research, and requires commitment of the villagers, and recognition of professionals. The process includes first the collection of data on natural, social, and cultural phenomena as well as their meanings. The villagers collect and classify the data, academics support the documentation of the process. After the relevant conditions are described, discussions, opinion building, and exchange within the focus groups, and subsequently with others who are not part of the research, follow. Thai Baan are supported and accompanied by academic NGOs or other civil associations, research and dissemination activities are (Lamb et al., 2019).

As indicated above, Thai Baan integrates both conventional as well as unconventional aspects at different levels of research (Blake & Pitakthepsombut, 2006). Data that could challenge dominant theories on the benefits of hydro-power need to be first collected, recorded, and systematically classified in order to be accepted as scientifically sound. Collecting empirical evidence is therefore a necessary part in any empowering research practice. The unconventional nature of collaboration in Thai Baan lies in the fact that, in order for synthesis to become possible, the conventional scientific activity is under the leadership of the non-professional researchers. In the context of river and riverine ecosystem research, this is mainly the fishers and other villagers who are living off fishing and the rivers. Thai Baan has become established as a model for action research in these contexts mainly, but not exclusively. It is also used in collaborative research designs with indigenous groups to prove the innocuousness of slash and burn agriculture in the hills of Northern Thailand. Recollecting, recovering and documenting local concepts of topography, animal and plant life, processing methods, and exchange relations is the first step to restore intellectual ownership over experiences, spaces, and places. The complete reversal of roles within the research process and the rejection of the rationalized and technocratic language of science and policy fundamentally challenge the colonizing, national narrative of exploitation of nature for the sake of modernization and progress (Blake & Buapun, 2010; Chayan, n.d.). Stories, songs, and myths are not treated as material to be analyzed and critically interrogated, but as part of local cultural diversity and as means of dissemination and communication. The collaborative nature of the research shows also in the acceptance of these alterities to remain constitutive parts of the research.

As Thai Baan was adopted to new settings and areas, for example the Lower Songkran Basin (Blake & Rattaphon, 2006; Lamb et al., 2019), the basic steps in Thai Baan research were systematized and generalized to provide guidelines to other groups. Blake and Pitakthepsombut (2006) have published a 13-step summary of the most important points of Thai Baan research, including preparation, introduction, and the foundation of ownership. The first phase is identifying a research interest, drafting a timetable, and assigning tasks and responsibilities as well as organizing workshops and reporting. The second phase of research comprises in-depth research

on agreed topics, and organization of related activities – for example, awareness raising, innovative practices, etc. The third phase is mainly presentation and dissemination of findings and results as well as discussion of next steps for management and preservation activities (Blake & Rattaphon, 2006, p. 9). So far, this standardized process of Thai Baan is very similar to research guidelines on transdisciplinarity research that also usually consist of three phases.

However, the core of Thai Baan is to make *non-scientists* and *non-academics* the central agents of a research process. Methods of participation and action research and a wide range of qualitative research methods emphasize not only the collective, but also bodily, material, and natural characteristics of knowledge. While personal differences, rivalries, or conflicts are part of all collective actions, the main questions remain: what is the overall aim? In Thai Baan sucess is collective action, effectively challenging the hegemonic ideas on national development and small-scale rural livelihoods.

Transdisciplinary research too engages in areas in which societal decision making and economic interest resulted in harmful or 'wicked' problems (Pohl, Truffer, & Hirsch Hadorn, 2017). Thai Baan, however, combines the widespread concerns over such problems with political action. Collaboration in Thai Baan serves the legitimation of local concerns in national decision-making processes. The academic and NGO research partners use their relative power and position to support local struggles. The reallocation of responsibilities and reversal of conventional research procedures are primarily symbolic acts. Nevertheless, they affect practices and how people perform their roles. Communication, translation, and negotiation activities are particularly labor-intensive and emotionally demanding. Therefore, the main resources needed in Thai Baan research are time, friendship, and commitment (Amornsakchai et al., 2000; Blake & Rattaphon, 2006; Chayan, n.d.). Transdisciplinarity lacks this explicitly political objective and does not make a priority of emancipative liberating agendas. It aims explicitly at repairing development implementations gone wrong. It sees collaboration as assignment of tasks according to expertise and hence as efficient labor division, thus maintaining the dualism between science and practice.

The Blind Spots of Ideal-Type Collaboration

There are a variety of collaborative study designs inducing different forms of transdisciplinarity (Mobjörk, 2010; Pohl, 2011). Some are more theoretical in nature (Mobjörk, 2010, p. 867), while others explicitly address inclusion of non-academic actors in environmental, societal, and planning-related problem-solving. Pohl and Hadorn (2010), and others (Bergmann et al., 2012; Lang et al., 2012) provide for integration of non-academic actors in all three steps of the research process – problem definition, data collection, and dissemination. Firstly, non-academic actors should be included in the problem definition and the outline of respective research questions. Secondly, non-academic partners should be engaged in participatory data collection and included in data analysis. Thirdly, dissemination and fruition of research result should take place according to respective needs. Bergmann et al. (2012, p. 83) have drafted a broad and user-friendly framework for grouping interests, actors, and activities to guide collaboration throughout the research process. Bammer (2016, p. 41) offers a toolkit

to help scientists undertaking transdisciplinary research and suggests guiding questions ("for what and for whom", "how", and "context"), as well as a how to ask these questions. Many publications seem to offer some kind of application instructions for participative social science research (Gaziulusoy & Boyle, 2013; Polk, 2015). In their evaluation of transdisciplinary projects, Rosendahl et al. (2015) examine the practice of collaboration and relations on equal footing across power imbalances from a critical, feminist perspective. They argue for a refined distinction of the different steps, which, they say, will enable researchers to pay more attention to different perspectives and power imbalances throughout the project and hence increase the likelihood of strong objectivity in the research outcomes. Contextualization through communication and translation (Nowotny, 2006) and what Rose (1997) has termed reflexive positionality[6] are stressed as necessary preconditions to identify and formulate shared problems. However, Rosendahl et al. (2015) claim that this often remains at the level of lip service. In a relationship that is characterized by power imbalance, the establishment of *formal equality* seems to be not enough. Dealing with challenges in a way that is power-sensitive and attends to social or other inequalities should be considered more strongly in transdisciplinary endeavors. Researchers may need to reverse power relations first in order to establish equality at some later point in time.

The main difficulty that we have encountered with transdisciplinary methodologies throughout the KNOTS project (Dannecker, 2020, this issue) is the fact that it addresses conventional academic researchers as the main agents of transdisciplinarity. Scientists are not naturally endowed with the social skills required to navigate through such an undertaking. Rather, throughout our careers we are trained to develop leadership and authority and to defend our scientific findings and positions in rigorous assessment and review processes. In addition, transdisciplinary research projects of the last two decades have been subject to a strict and tight project-management logic, rationalizing and objectifying components of the research, and making teambuilding a 'work package' instead of a process of building epistemic friendships (Nguyen, Nastasi, Mejia, Stanger, & Madden, 2016). Specifically, the 'stakeholder' terminology is revealing. In many transdisciplinarity studies, 'stakeholders' are almost exclusively non-academic actors, while academics and scientists are outside that category. Such classification is dangerous as it reflects the supposedly neutral and detached self-understanding claimed by positivist science, which have been criticized by those advocating for more collaborative methodologies.

CONCLUSION

The opening of science to society by stepping down from the ivory tower has been part of an overall transformation in science. In the social sciences specifically, the trend has moved from *dialogue* to *collaboration* (Lieven & Maasen, 2007). Collaborative study designs and methodologies are said to be generally transformative, and therefore one would expect these designs pay special attention to how power imbalances

6 Reflexive positionality (Rose, 1997) tries to come to terms with the impossibility of knowing one's positionality always and in any situation. Regarding research and collaborative activities, we can position ourselves only to a certain degree on our own; rather, the positionalities of all actors in a collaborative undertaking are relational, not independent of each other and hence subject to constant negotiations.

are negotiated and how difference and inequality impact on collaborating actors (Lieven & Maasen, 2007; Mobjörk, 2010; Rosendahl et al., 2015). Experience shows that collaborations between very heterogeneous actors, which promise to open academia, are difficult to pursue due to persistent, powerful standards and norms of a 'purely' academic operationalization of knowledge (Felt, Igelsböck, Schikowitz, & Völker, 2016, p. 32; see also Dannecker, 2020 this issue). Collaborative practices in such settings face severe limitations to the breaking-up of old boundaries, and the deconstruction of dominant knowledge hierarchies. Within science, as well as beyond, conventional divisions are being reproduced throughout the process. In addition, structural conditions of higher education and respective policies in which transdisciplinarity is tightly embedded run contrary to its very aspirations.

Transdisciplinary or not, funding agencies often require hierarchical structures for reasons of efficacy, accountability, and responsibility and hence reinforce traditional labor divisions in research projects. There is a shared understanding that our present, complex societal systems require interaction and synthesis of the perspectives of diverse societal actors (Hadorn et al., 2010; Mobjörk, 2010; Novy et al., 2008), and a bridging of researchers' and practitioners' knowledge production (Angelstam et al., 2013). Transdisciplinarity and Thai Baan aspire to change and transform persistent problems in a way that is inclusive and collaborative and avoids top-down action. They draw on different traditions, such as practice-oriented stakeholder participation (Christinck & Kaufmann, 2018) or more scholarly-based, participatory action research methodology.

Transdisciplinarity provides procedures, frameworks, and models to advise junior scientists, on how to formulate their research questions to relate to societal problems "out there" (Pohl et al., 2017). For technical professionals and administrative authorities, it is important to learn how to listen and include the needs and wants of those affected by any given development intervention, not only the interests and ideas of the contracting parties. Participatory, collaborative models are difficult to carry out in practice. The general assumption that scientists and experts are trained, expected, and paid to find solutions and to have answers is very dominant. Critical theories and emancipatory pedagogies are still marginal in academic curricula and academia's participation in the power/knowledge nexus is seldom problematized in higher education programs. They do not provide sufficient "tools that could dismantle the master's house" (Lorde, 1984), nor do they teach methodology and theory as acts of friendship (Nguyen et al., 2016) or solidarity (Mohanty, 2013). A collaborative and integrative design, which is unable to give up control and ignores the possibility of coalitionary engagement and solidarity is likely to reproduce non-academic actors as science's *Other* (Said, 1979).

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ABOUT THE AUTHORS

Alexandra Heis is a PhD candidate at the Department of Development Studies, University of Vienna. Her research interests include social science methodology, transdisciplinarity, collaborative research, rural development, urban studies, critical migration research, and intersectionality.

▸ Contact: alexandra.heis@univie.ac.at

Chayan Vaddhanaphuti serves as the director for the Regional Center for Social Science and Sustainable Development (RCSD) and the Center for Ethnic Studies and Development (CESD), Faculty of Social Sciences, Chiang Mai University. He is a renowned Thai scholar and activist and co-developed Thai Baan research in the early 2000s. His fields of interests include development studies, multiculturalism, ethnic relation, ethnic identity, cross-border issues, knowledge and power, health social science, resource management, and regionalization of development in the Mekong sub-region.

▸ Contact: ethnet@loxinfo.co.th